

CLIMATOLOGICAL DATA FOR SEPTEMBER, 1911.

DISTRICT No. 8, TEXAS AND THE RIO GRANDE VALLEY.

B. BUNNEMEYER, District Editor.

GENERAL SUMMARY.

The month of September was characterized by persistently warm and generally dry weather, and so far as Texas is concerned it was the warmest September in the last 24 years. The precipitation was decidedly deficient in the central and eastern portions of the district where it averaged but slightly more than half the normal amount, although some heavy rains occurred in a few scattered localities. In the western portion of the district, embracing the upper Rio Grande watershed, the monthly amounts exceeded the normal by nearly one-half inch, and there was much cloudy weather in that section, while in the remaining portions of the district the percentage of sunshine was abnormally high. The precipitation was generally well distributed throughout the month, showers occurring daily in some portion of the district. The number of days with 0.01 inch or more of precipitation averaged 10 in Colorado, 7 in New Mexico, and 4 in Texas. Flurries of snow occurred at Harveys Upper Ranch, N. Mex., on the 3d and 21st. There was a conspicuous absence of severe local storms during the month, and the weather generally was favorable for farming operations and especially for gathering the cotton crop, although more moisture was needed in many localities.

The greatest and least monthly amounts of precipitation in Colorado were 5.63 inches at Cumbres and 0.69 inch at Manassa; in New Mexico, 3.99 inches at Cloudcroft and 0.27 inch at Newman; and in Texas, 5.60 inches at Raymondville, while none occurred at Bridgeport and Fort McIntosh, and a trace only at three other stations. Excessive precipitation of 2.50 inches or more in 24 consecutive hours occurred at 10 stations in Texas, chiefly in the northern portions of the State, the heaviest being 4.21 inches at Long Lake.

TEMPERATURE.

The monthly mean temperature was 2.6° above the normal in Colorado, 1.9° above in New Mexico, and 5.1° above in Texas. The weather was uniformly warm during the month, and there were but few days on which the temperature was less than the normal. The excess of temperature was greatest in the middle portions of the district, where it varied from 6° to 9° . The diurnal range of temperature varied from about 8° on the upper Texas coast to about 34° in the extreme northwestern portion of the district.

The highest and lowest temperatures reported were: In Colorado, 86° at Saguache on the 1st, and 29° at Wagon Wheel Gap Experiment Station on the 7th; in New Mexico, 100° at Carlsbad on the 14th, 16th, and 17th,

and 28° at Anchor Mine on the 16th; and in Texas, 106° at Barstow on the 6th, and 53° at Plainview on the 19th, and at Seymour on the 20th.

PRECIPITATION.

While the rainfall over the upper reaches of the Rio Grande watershed north of El Paso, Tex., averaged nearly one-half inch greater than normal, there was a marked deficiency of nearly 2 inches over the Texas stretch. The average for the entire drainage basin was 1.83 inches. The greatest monthly amount was 3.99 inches at Cloudcroft, N. Mex., and there was none at Fort McIntosh, Tex.

The rainfall over the Rio Pecos watershed was generally deficient, although in a few localities it was slightly greater than normal. The greatest monthly amount was 3.12 inches at Mountain View, Tex., and the least, 0.30 inch, at Demonstration Farm and at Taft, N. Mex. The average was 1.51 inches.

The Texas watersheds showed a decided and general deficiency of precipitation which varied from -0.98 inch for the Brazos drainage basin to -2.83 inches for that of the Nueces. In a few localities in the Colorado, Brazos, and Trinity watersheds and the coastal plains the monthly amounts were slightly above the normal. The greatest monthly amount was 5.60 inches at Raymondville in the coastal plains, while no precipitation occurred at Bridgeport in the Trinity Valley. The following are the average monthly amounts in inches for the various watersheds: Nueces, 0.49; San Antonio, 0.52; Guadalupe, 1.35; Lavaca, 2.32; Colorado, 1.86; Brazos, 1.75; Trinity, 1.83; Neches, 1.07; Sabine, 1.16; and coastal plains, 2.07. These amounts are considerably less than those reported for the preceding month, except in the case of the Lavaca watershed and of the coastal plains, which showed gains.

RIVER CONDITIONS.

There was but little water in the Rio Grande and Rio Pecos during the month, although the former stream had several moderate rises. At Elephant Butte, N. Mex., the water in the Rio Grande rose sufficiently high during the first part of the third decade to interfere with the work of the project at that place. The lower Rio Grande, although low, had ample water for irrigation and for stock.

Of the Texas streams the Guadalupe, Neches, and Sabine were at low-water mark during the entire month; in fact, the Guadalupe was lower than in any previous September since the records began in 1905. The Colo-

rado, Brazos, and Trinity had good flows, and the stages recorded are the highest of record for September. Sharp rises occurred in these streams during the first decade, especially in the lower Colorado and upper Trinity. In the latter stream a stage of 25.4 feet was recorded at Dallas on the 6th, which is 0.4 foot above flood stage. Timely warnings were issued for this rise and no damage resulted. Most of the water in these streams resulted from heavy rains in the latter part of August.

MISCELLANEOUS.

Frosts.—Light to killing frosts were reported from some of the northern stations in New Mexico on several dates, the first killing frost occurring on the 3d at Har-

veys Upper Ranch, on the 9th at Red River Canyon, and on the 21st at Bluewater. So far this season there has been no frost in Texas.

Earthquakes.—On September 1, at 3.30 p. m., an earthquake shock was distinctly felt at Jemez Springs, N. Mex. It was accompanied by a slight rumble like distant thunder, lasting about 5 or 6 seconds. A few minutes later there was another rumble, but no appreciable quiver. On September 4, at 5.30 p. m., another and severer earthquake shock occurred at the same place. The rumble was slightly louder and 2 or 3 seconds after it began there came a quick, sharp tremble traveling in a direct. line from south to north. Both shocks were sufficiently strong to rattle bottles and dishes on shelves, and the latter one caused even dizziness in some people.

TABLE 1.—Climatological data for September, 1911. District No. 8, Texas and Rio Grande Valley.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Greatest in 24 hours.	Departure from the normal.	Total snowfall, unmeasured.	Number of rainy days 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Colorado.																				
Blanca.	Costilla.	7,865	2							5.63	1.48	0	14	8	14	8		sw.	Dr. L. C. Audrain.	
Cumbres.	Conejos.	10,015	4							+ 0.72	0.49	0	6	5	21	4		sw.	Mrs. Ida M. Lively.	
Garnett.	Costilla.	7,576	18	57.2	+ 3.1	82	11†	31	8	48	1.56	+ 0.72	0	14	8	14	8		sw.	Chas. Speiser.
Hermit.	Hinsdale.	9,843	4																	Marion Mason.
Laveta Pass.	Costilla.	9,000	1								2.05		0.41	0	9	9	13	8	w.	Clara M. Wright.
Manassa.	Conejos.	7,700	5	57.4		82 ^b	1	31 ^b	7	47	0.69		0.48	0	4	10 ^b	11 ^b	7 ^b	sw.	J. B. Chapman.
Platoro.	do.	8,675	4								3.50		1.03	0	18	14	6	10	sw.	Walter R. Hook.
Saguache.	Saguache.	7,740	19	59.4	+ 3.3	86	1	32	8	48	1.00	+ 0.36	0.35	0	4	8	4	18	w.	Eugene Williams.
San Luis.	Costilla.	7,794	20	57.0	+ 1.4	81	1	33	25	45	1.58	+ 0.46	0.43	0	6	15	7	8	sw.	P. B. Albright.
Wagon Wheel Gap Experiment Station.	Mineral.	9,235	49.6			70	11	29	7	36	2.01		1.27	0	14	10	10	10	nw.	U. S. Weather Bureau.
New Mexico.																				
Agricultural College.	Dona Ana.	3,863	49	74.7	+ 1.7	95	24	50	21†	41	1.18	- 0.18	0.88	0	6	17	11	2	s.	N. Mex. Agricultural College.
Alamogordo (near).	Otero.	4,338	10	74.0	+ 1.5	98	22	52	1	44	2.31	+ 1.03	1.03	0	9	8	20	2	sw.	Charles Sutton.
Alamogordo.	do.	4,320	2								2.00		0.92	0	4					Agent E. P. & S. W. R. R.
Alamos Ranch.	Sandoval.	7,800	1								1.50		0.39	0	9	22	1	7	sw.	Harold H. Brooks.
Albuquerque.	Bernalillo.	5,000	35								1.04	+ 0.19	0.52	0	7					Pitt Ross, C. E.
Ancho.	Lincoln.	6,112	2								0.94		0.42	0	4					Agent E. P. & S. W. R. R.
Anchor Mine.	Taos.	10,600				80	9†	28	16				0.69	0	6	17	12	1	e.	Charles H. Brigham.
Artesia.	Eddy.	3,350	4	74.2		98	15†	51	21	41	0.87		0.72	0	4	20	4	6	se.	Will Benson, C. E.
Aspen Grove Ranch.	Rio Arriba.	9,000	2								2.53		0.39	0	13	1	29	0		Junius D. Maupin.
Bateman's Ranch.	do.	8,900	2								2.13		0.90	0	5	13	5	2	w.	John W. Bateman.
Berino.	Dona Ana.	3,788	10	58.4	- 1.5	84	12	31	21	50	1.66	+ 0.23	0.60	0	9	8	22	0	w.	C. A. Thompson.
Bluewater.	Valencia.	6,732	10								2.04		1.50	0	7	17	8	5	s.	Bluewater Development Co.
Boaz.	Chaves.	4,154	2	73.6		94	5†	51	21	38	0.97		0.74	0	3	20	8	2	s.	D. C. Savage.
Capitan.	Lincoln.	6,348	2								2.55		0.69	0	8	25	5	5	se.	Agent E. P. & S. W. R. R.
Carlsbad.	Eddy.	3,120	16	77.7	+ 3.5	100	14†	55	21	39	1.16	- 0.14	0.62	0	3	19	8	3	se.	U. S. Reclamation Service.
Carrizozo.	Lincoln.	5,429	3	69.6		95	1	52	11†	36	1.90		1.31	0	4	20	6	4	sw.	Agent E. P. & S. W. R. R.
Chama.	Rio Arriba.	7,851	12	56.6	- 1.1	81	11	34	21	40	3.46	+ 1.51	0.90	0	9	18	11	1	sw.	Frank C. Johnson.
Cloudcroft.	Otero.	8,650	9	57.8		85	24	37	20	41	3.99	+ 1.02	1.07	0	10	8	21	1	sw.	Agent E. P. & S. W. R. R.
Corona.	Lincoln.	6,666	2								1.00		0.44	0	5	23	7	sw.	Do.	
Coyote.	do.	5,800	2								2.49		1.73	0	10	15	6	9	sw.	Do.
Cundiyo.	Santa Fe.	6,889	2								1.83		0.70	0	5	20	7	3	w.	Juan Vizil.
Demonstration Farm.	San Miguel.	6,800	2								0.30		0.30	0	1					Erb & Westerman.
Escandido.	Torrance.	6,272	2								1.28		1.00	0	3	16	12	2	w.	Agent E. P. & S. W. R. R.
Espanola.	Otero.	4,014	2								1.45		0.87	0	7	21	9	0	w.	Do.
Estancia.	Rio Arriba.	5,590	13	67.0	+ 1.8	90	12	40	21†	46	2.02	+ 0.75	0.60	0	7	15	11	4	sw.	Mrs. Ella F. McBride.
Fort Stanton.	Lincoln.	6,140	6	64.2		92	1†	37	29	47	0.55		0.18	0	4	16	3	3	e.	Agent N. Mex. Central R. R.
Fort Sumner.	Guadalupe.	6,231	33	64.4	+ 2.9	87	24	40	21	31	2.10		0.40	0	10	13	9	8	w.	U. S. Sanitarium.
Gallinas.	Lincoln.	3,960	3	72.8		95	13†	47	20	42	0.43		0.33	0	3	28	2	0	w.	F. A. Manzanares.
Gallinas Planting Station.	San Miguel.	6,635	2								1.94		1.18	0	6	15	5	10	w.	Agent E. P. & S. W. R. R.
Glorietta Ranch.	Socorro.	7,500	4	60.8		84	11	38	19†	39	0.61		0.35	0	4	21	8	1	sw.	U. S. Forest Service.
Harvey's Upper Ranch.	San Miguel.	5,700	1								3.68		0.93	0	10	10	11	9	sw.	Charles M. Crossman.
Hillsboro.	Sierra.	5,224	13	71.0	+ 2.6	92	3†	50	9†	42	2.60	+ 0.39	0.92	0	12	16	13	1	se.	Simon B. Warner.
Hondo Reservoir.	Chaves.	3,904	2	73.8		94	5†	51	21	40	2.93		1.80	0	5	22	5	3	s.	Dr. Frank I. Givens.
Jemez Springs.	Sandoval.	6,100	1	63.8		83	10	42	21	31	2.10		0.40	0	10	13	9	8	sw.	U. S. Reclamation Service.
Knowles (near).	Eddy.	4,300	1	75.4		97	5†	50	19	37	2.06		1.39	0	5	21	6	3	se.	Linus L. Shields.
Laguna.	Valencia.	5,840	6	68.2		90	5	45	23	34	1.20		0.50	0	5				se.	J. W. Mosley.
Lagunita.	Guadalupe.	4,500	6								2.75		0.83	0	11	12	16	2	sw.	Gus Weiss.
Lake Valley.	Sierra.	5,412	6								3.68		1.52	0	25	4	1	sw.	Charles M. Crossman.	
Las Vegas.	San Miguel.	6,385	24	63.2	+ 2.4	85	11	40	21†	41	0.68		0.50	0	4	13	14	3	sw.	Simon B. Warner.
Liston.	Chaves.	5,000	1								1.09		0.50	0	5	20	10	1	sw.	Dr. Frank I. Givens.
Los Lunas (near).	Valencia.	4,900	21	68.4	+ 2.1	92	16	46	21	41	1.11	- 0.05	0.70	0	4	10	19	1	sw.	U. S. Reclamation Service.
Magdalena.	Socorro.	6,557	6	64.9		84	4†	46	21	34	2.35		0.65	0	14	12	17	1	sw.	Linus L. Shields.
Mescalero.	Otero.	6,627	6	62.8		81	12†	42	21	33	3.06		1.05	0	12	15	8	7	sw.	J. W. Mosley.
Mineral Hill.	San Miguel.	7,050	6								1.00		1.00	0	1	19	3	8	sw.	Gus Weiss.
Monterey.	Otero.	4,436	2			92	13	58	21		2.39		1.05	0	8	15	10	5	sw.	P. A. Turnbull.
Mountaintain.	Torrance.	6,547	10	65.5	+ 2.9	89	2	38	20	42	3.28	+ 1.55	1.65	0	15	3	26	1	sw.	William P. Kiel.
Newman.	Otero.	4,547	2								0.27		0.27	0	1	24	5	1	w.	N. Mex. Normal University
Noria.	Dona Ana.	4,114	2								1.42		0.58	0	4	11	5	14	w.	H. G. Liston.
Ororgrande.	Lincoln.	4,171	2			92	14	55	22		1.10		0.85	0	3	14	16	0	se.	Richard Pohl.
Oscuro.	Eddy.	5,016	2								2.62		1.06	0	9	23	3	4	se.	William Pender.
Otis.	do.	3,100	2								1.79		0.83	0	7	23	6	1	se.	Rev. R. H. Harper.
Otto.	Santa Fe.	6,200	2								1.79		0.57	0	8	14	12	4	s.	W. M. Nelson.
Pastura.	Guadalupe.	5,285	2			94	7	53	21		2.43		1.63	0	8	14	12	4	s.	Agent E. P. & S. W. R. R.
Placitas (near).	Bernalillo.	8,000	1	60.0		80	11	39	21	31	2.18		0.46	0	9	17	13	0	w.	Mrs. John W. Corbett.
Plainview.	Chaves.	4,300									1.59		0.90	0	11	5	14	4	se.	Agent E. P. & S. W. R. R.
Red River Canyon.	Taos.	8,956	3	53.6		80	11	30	20	46	1.90		0.60	0	5	20	9	1	e.	J. J. MacInness.
Rincon.	Dona Ana.	4,030	13	75.0	+ 3.0	95	16	55	22†	37	0.82	- 1.31	0.32	0	3	6	13	11	s.	U. S. Weather Bureau.
Rio Grande Dam.	Sierra.	4,265	13								3.00		0.30	0	1	13	13	4	s.	Agent A. T. & S. F.

TABLE 1.—Climatological data for September, 1911. District No. 8—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeasured.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
<i>New Mexico—Con.</i>																				
Truchas.	Rio Arriba.	7,935	2	59.1	.....	78	11	41	20	29	2.46	.....	0.50	0	12	7	16	7	w.	Miss Ruth Rendon.
Tularosa.	Otero.	4,436	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.15	0	5	11	12	7	.....	Irby L. Fairless.
Vaughn.	Guadalupe.	5,952	2	.....	.....	83	12	38	24	38	1.26	.....	0.52	0	10	21	4	5	s.	Agent E. P. & S. W. R. R.
Virgilsyria.	Taos.	7,500	1	62.6	.....	79	16	32	18	41	1.77	-0.28	0.81	0	8	9	13	8	w.	Dr. I. N. Woodman.
Winsors.	San Miguel.	8,200	13	55.0	+ 3.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Henry D. Winsor.
<i>Texas.</i>																				
Abilene.	Taylor.	1,738	26	81.0	+ 6.8	95	17	61	19	29	1.38	-1.76	1.15	0	2	24	4	2	s.	U. S. Weather Bureau.
Albany.	Shackelford.	1,429	17	80.0	+ 4.5	99	18	59	20	35	2.53	-0.16	2.20	0	2	27	2	1	se.	N. L. Bartholomew.
Alice.	Jim Wells.	209	.....	85.7	.....	103	5	70	17	30	0.64	.....	0.32	0	7	13	14	3	se.	R. M. Boerum.
Alpine.	Brewster.	4,482	1	.....	.....	.....	.....	.....	.....	.....	1.56	.....	0.56	0	4*	22*	6*	1*	sw.	J. Frank Dobie.
Alvin.	Brazoria.	49	13	81.6	.....	95	12	69	17	24	3.08	-0.68	1.41	0	11	7	13	10	se.	Alvin Japanese Nursery.
Anahuae.	Chambers.	23	2	.....	.....	.....	.....	.....	.....	.....	3.57	.....	0.88	0	12	.....	.....	.....	.....	B. H. Collins.
Antelope.	Jack.	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.60	.....	2.05	0	2	25	5	0	.....	Chas. C. Hawkins.
Aspermont.	Stonewall.	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.07	.....	1.02	0	4	21	7	2	se.	Bryant Link Co.
Austin.	Travis.	593	55	84.2	+ 6.1	97	12	69	17	23	0.44	-3.30	0.38	0	3	19	10	1	se.	A. Deussen.
Ballinger.	Runnels.	1,637	15	80.8	+ 5.1	98	14†	63	23	37	0.56	-0.56	2.80	0	3	25	3	2	s.	E. M. Eubank.
Barstow.	Ward.	2,573	4	82.4	.....	106	6	60	2	42	1.32	.....	0.67	0	3	17	8	5	e.	Lee F. Freeman.
Bay City.	Matagorda.	53	1	.....	.....	.....	.....	.....	.....	.....	3.04	.....	0.60	0	8	13	4	13	s.	E. C. Quereau.
Beaumont.	Jefferson.	29	10	82.8	+ 2.1	97	18	69	17	24	2.79	-0.14	0.89	0	8	11	0	19	se.	John Bender.
Beeville.	Bee.	225	85.6	+ 4.9	103	21	70	20	32	0.48	-2.30	0.36	0	2	5	15	10	se.	L. E. Dickey.	
Big Spring.	Howard.	2,396	13	83.0	.....	103	18	59	19	36	1.79	.....	1.78	0	2	16	13	1	s.	B. Reagan.
Blanco.	Blanco.	1,350	15	83.8	+ 7.1	101	13	63	1	31	1.04	-2.09	0.44	0	4	17	12	1	se.	R. C. Crist.
Boerne.	Kendall.	1,412	19	83.1	+ 7.1	101	15	62	17†	38	0.40	-2.54	0.37	0	2	15	14	1	se.	F. W. Schweppe.
Booth.	Fort Bend.	81	10	.....	.....	.....	.....	.....	.....	.....	5.42	+ 2.40	1.44	0	14	26	0	4	e.	T. R. Booth.
Bowie.	Montague.	1,113	16	82.3	+ 4.2	100	12	62	19	31	2.22	-0.70	1.40	0	3	20	8	2	s.	Craig Anderson.
Brady.	McCullough.	1,500	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. W. Virlin, Jr.	
Brazoria.	Brazoria.	25	22	82.2	+ 4.3	97	19	69	20	27	3.62	-1.94	0.77	0	15	23	5	2	s.	Mrs. M. A. Stevens.
Brazos.	Palo Pinto.	801	2	.....	.....	.....	.....	.....	.....	.....	3.04	.....	2.93	0	2	25	3	2	s.	Robt. E. Boyett.
Brenham.	Washington.	350	26	84.4	+ 5.4	101	15†	67	1	26	0.22	-2.98	0.15	0	3	19	5	6	se.	Mrs. B. F. Sloan.
Bridgeport.	Wise.	754	2	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	24	3	3	s.	Claude Strange.
Brighton.	Nueces.	12	18	86.6	+ 6.0	98	9	73	17	23	1.20	-1.82	1.05	0	3	29	1	0	se.	G. H. Ritter.
Brownsville.	Cameron.	38	47	83.4	+ 3.1	97	23	71	27	25	2.75	-2.87	0.80	0	10	17	13	0	se.	U. S. Weather Bureau.
Brownwood.	Brown.	1,342	19	81.6	+ 4.8	99	11†	61	17	36	3.65	-0.87	2.65	0	3	24	4	2	s.	Mrs. Pearl Smith.
Cameron.	Milan.	3	86.6	.....	.....	103	11	68	22	30	0.64	.....	0.40	0	2	26	4	0	s.	J. E. W. Wattis.
Carmona.	Polk.	330	3	81.4	.....	98	17	59	1	33*	1.44	.....	0.58	0	8	19*	1*	1*	s.	M. S. Spitler.
Claytonville.	Fisher.	2,100	16	80.4	+ 4.6	98	19	58	17	29	1.82	-0.73	1.82	0	1	22	6	2	se.	Wm. Lanius.
Clifton.	Bosque.	671	.....	.....	.....	.....	.....	.....	.....	.....	3.90	.....	2.00	0	3	13	17	0	s.	R. M. Jones.
Coleman.	Coleman.	1,710	17	79.6	+ 5.0	97	29	62	4	33	2.20	-1.41	1.53	0	3	12	17	1	s.	J. E. Stevens.
College Station.	Brazos.	308	21	84.4	+ 5.4	101	12†	65	1	30	1.61	-1.71	0.75	0	8	1	27	2	s.	Prof. G. S. Fraps.
Colorado.	Mitchell.	2,066	17	81.4	+ 6.3	97	12†	57	19	29	2.12	-0.26	1.20	0	2	24	1	5	s.	R. M. Webb.
Columbia.	Brazoria.	34	22	81.2	+ 3.5	98	5	65	1	29	2.85	-2.45	0.75	0	6	11	19	0	s.	R. B. Loggins.
Columbus.	Colorado.	206	7	.....	.....	.....	.....	.....	.....	.....	1.76	.....	0.80	0	4	18	12	0	ne.	Mrs. Sophie Bridge.
Corpus Christi.	Nueces.	20	24	83.0	+ 4.0	92	5	72	2	14	1.77	-2.23	0.66	0	9	18	12	0	se.	U. S. Weather Bureau.
Corsicana.	Navarro.	445	22	83.2	+ 5.9	100	12†	63	1	31	1.61	-1.18	0.85	0	3	23	5	2	s.	D. H. Winn.
Cotulla.	La Salle.	425	4	.....	.....	.....	.....	.....	.....	.....	3.90	.....	2.00	0	4	29	10	0	s.	Holland Agricultural Co.
Crockett.	Houston.	350	7	85.0	.....	102	15	64	1	31	0.71	.....	0.30	0	4	29	10	0	s.	A. M. Rencher.
Cuero.	De Witt.	177	21	86.2	+ 6.5	102	12†	70	17	32	0.21	-3.74	0.12	0	3	23	4	3	s.	H. R. Frobose.
Dallas.	Dallas.	466	22	83.6	+ 6.2	102	11†	62	17	34	2.21	-0.61	1.21	0	4	24	0	6	s.	G. A. Eisenlohr.
Danevang.	Wharton.	145	15	83.5	+ 4.4	99	18†	67	1	29	4.21	+ 0.36	1.36	0	8	19	8	3	se.	H. P. Hernansen.
Decatur.	Wise.	1,047	15	.....	.....	.....	.....	.....	.....	.....	1.76	.....	0.49	0	7	15	14	1	e.	Fort Worth & Denver City Ry.
Del Rio.	Valverde.	952	5	86.7	+ 7.8	103	5	72	26	28	0.36	-2.58	0.36	0	1	21	9	0	se.	U. S. Weather Bureau.
Devine.	Medina.	653	1	87.6	.....	102	22†	70	1	28	0.12	.....	0.12	0	1	27	14	0	se.	M. A. Keller.
Dialville.	Cherokee.	575	7	83.4	.....	99	13†	64	1	29	0.37	.....	0.20	0	3	16	14	0	s.	J. M. B. McKnight.
Dilley.	Frio.	569	1	.....	.....	.....	.....	.....	.....	.....	1.80	.....	1.80	0	1	21	6	3	s.	John W. Miller.
Dublin.	Erath.	1,466	15	82.6	+ 6.0	102	12	63	1	34	2.48	-0.04	1.90	0	5	21	6	3	s.	Jno. O. Shafer.
Duval.	Travis.	820	22	83.8	+ 4.3	98	5†	68	17	26	0.62	-1.83	0.57	0	2	24	1	5	se.	J. C. Edgar.
Eagle Pass.	Maverick.	800	34	86.8	+ 5.1	101	14	72	17	35	0.03	0.03	0.03	0	1	17	13	0	se.	Charles Tarver.
Eastland.	Eastland.	1,420	4	79.6	.....	99	23	60	3†	34	2.75	.....	2.25	0	2	23	6	1	s.	J. R. Gilbreath.
Edna.	Jackson.	71	2	.....	.....	.....	.....	.....	.....	.....	3.18	.....	1.10	0	6	1	6	1	e.	E. L. Faires.
El Paso.	El Paso.	3,762	32	77.5	+ 4.8	94	16	61	21	27	1.00	-0.45	0.49	0	7	15	14	1	e.	U. S. Weather Bureau.
Encinal.	La Salle.	558	3	.....	.....	.....	.....	.....	.....	.....	T.	.....	0	0	0	0	0	0	.....	H. C. Braden.
Eola.	Concho.	.....	.....	.....	.....	.....	.....	.....	.....	.....	T.	.....	0	0	0	0	0	0	.....	E. W. Neal.
Fairland.	Burnet.	1,000	22	85.1	+ 8.1	104	12†	62	1	35	0.22	-2.32	0.14	0	4	27	2	1	s.	R. L. Bush.
Falfurrias.	Starr.	3	85.2	.....	.....	103	5†	67	20	34	1.11	.....	0.59	0	5	14	16	0	se.	W. A. Gardner.
Flinton.	Fayette.	465	3	84.2	.....	100	11†	66	1	29	1.19	.....	0.58	0	7	15	10	5	s.	Fred W. Laux.
Floydada.	Smith.	483	1	83.6	.....	101	11	61	1	29	0.45	.....	0.30</td							

TABLE 1.—Climatological data for September, 1911. District No. 8—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of overcast cloudy days.	Sky.	Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.								
Texas—Continued.																						
Hillsboro.	Hill.	628	8	85.8		103	13	67	1†	33	2.19	-	1.90	0	2	22	8	0	se.	W. G. Escott.		
Hondo.	Medina.	901	12	86.4		99	15	68	1†	31	0.42	-	2.83	0	2	26	0	4	se.	H. E. Haass.		
Houston.	Harris.	138	21	82.6	+ 4.1	96	12	68	2†	23	3.14	-	1.35	1.49	0	13	11	16	3	se.	U. S. Weather Bureau.	
Huntsville.	Walker.	400	27	82.4	+ 4.8	98	9	62	1†	30	3.83	+ 0.94	1.72	0	4	26	0	4	se.	W. Y. Barr.		
Jayton.	Kent.	1									0.60		0.60	0	1	24	5	5	e.	Wichita Valley Railway Co.		
Jewett.	Leon.	496	7	85.2		103	8†	65	1†	37	0.10		0.10	0	1	22	5	3	s.	Earle Adkisson.		
Junction.	Kimble.	1,645	8	80.9		98	63	60	1	34	1.40	-	1.10	1.20	0	2	24	8	1	s.	Judge John S. Durst.	
Kaufman.	Kaufman.	448	12	84.8	+ 5.8	101	11†	66	1	26	0.94	-	0.45	0	3	21	8	8	s.	B. J. Hubbard.		
Kerrville.	Kerr.	1,650	15	82.4	+ 6.8	99	6	59	1	34	0.43	-	2.44	0.25	0	3	14	8	8	s.	Robert E. Horne.	
Knickerbocker.	Tom Green.	2,050	7	81.2		100	17†	61	1	34	1.92		0.90	0	4	26	2	2	se.	Jos. Tweedy.		
Kopperl.	Bosque.	576	14								2.30	-	0.49	1.90	0	2	22	5	3	s.	T. A. Johnson.	
Lagrange.	Fayette.	276	1								1.86		1.09	0	8	20	5	5	se.	August Hermes.		
Lamesa.	Dawson.	2,500	1								2.26		2.10	0	2	26	2	2	se.	S. D. Austin.		
Lampasas.	Lampasas.	1,026	19	83.0	+ 6.2	100	11†	60	1†	36	1.34	-	1.21	0.71	0	3	25	1	4	s.	Mrs. K. L. Webber.	
La Parra.	Cameron.	38	9								0.80	-	2.78	0.40	0	2						Jno. G. Kennedy.
Laureles Ranch.	Nueces.	20	11																		Matt Cody.	
Liberty.	Liberty.	38	7	81.8		99	11	66	1	30	1.68		0.45	0	6	24	5	1	n.	Mrs. Fannie Sneed.		
Llano.	Llano.	1,040	20	85.0	+ 6.0	100	6†	65	1	29	0.92	-	1.06	0.32	0	4	24	6	0	se.	E. W. Torrence.	
Llano Grande.	Hidalgo.	86	3	83.4		101	6	62	1	36	0.35		0.35	0	1	19	8	3	se.	M. D. Wardlow.		
Long Lake.	Anderson.	229	6								4.62		4.21	0	4	15	12	3	s.	Geo. W. Ellis.		
Longview.	Gregg.	336	25	83.6	+ 5.9	99	16†	61	1	29	0.55	-	2.34	0.27	0	4	24	4	2	se.	C. A. Propst.	
Lubbock.	Lubbock.										1.33		0.56	0	7	18	10	2	s.	A. L. Paschall.		
Lufkin.	Angelina.	325	4	82.7		99	12	63	1	30	0.90		0.71	0	4	24	6	0	s.	T. A. King.		
Luling.	Caldwell.	418	22	84.8	+ 5.6	98	5†	69	1	24	0.58	-	2.34	0.35	0	6	14	15	1	s.	John Carter.	
McGregor.	McLennan.	713	1								1.08		1.00	0	2	21	7	2	s.	W. H. Whitley.		
Marathon.	Brewster.	4,043	1	72.4		92	18	57	4†	33	0.30		0.19	0	4	8	16	6	s.	Rev. A. P. Willis.		
Marble Falls.	Burnet.	771	3								T.		0	0	0	16	3	11	s.	R. H. Cochran.		
Marfa.	Presidio.	3									0.60		0.39	0	3						R. K. Colquitt.	
Marshall.	Harrison.	375	2	82.0		98	18	64	1	29	0.61		0.31	0	2	0	30	0	0	se.	Lee Scott.	
Matagorda.	Matagorda.	12	1								3.03		1.00	0	4	26	4	0	s.	W. E. McNabb.		
Mexia.	Limestone.	537	7	83.7		103	12	60	1	35	0.94		0.04	0	1	14	9	7	s.	Miss Josephine Newman.		
Midland.	Midland.	4	81.8			105	17	60	3†	35	0.75		0.65	0	3	1	27	2	s.	W. M. Midkiff.		
Mission.	Hidalgo.	140	1	84.4		99	8	71	19†	26	1.34		0.85	0	6	0	30	0	0	se.	Glenn Perryman.	
Mont Belvieu.	Chambers.	65	1								3.12		1.18	0	6	0	24	6	se.	A. R. Shearer.		
Mountain View.	Pecos.	2,900	1								0.35		0.30	0	2						Lucius W. Gosselin.	
Mount Blanco.	Crosby.	2,750	22	77.7	+ 5.7	99	17	54	2†	36	1.93	-	0.20	0.83	0	7	11	11	8	se.	H. C. Smith.	
Nacogdoches.	Nacogdoches.	271	12	82.0	+ 5.7	102	12†	59	1	29	0.53	-	2.83	0	1	0*	19*	10*	sw.	Miss Mary Hofmann.		
New Braunfels.	Comal.	720	22	82.6	+ 4.8	96	5†	66	1	25	1.00	-	1.80	0	3	18	12	0	se.	J. Giesecke.		
Palestine.	Anderson.	510	29	82.4	+ 7.7	96	12	65	1	24	0.59	-	2.61	0	2	17	12	1	s.	U. S. Weather Bureau.		
Panter.	Hood.	1,000	22								1.97	-	0.59	1.48	0	4					E. H. Snider.	
Pearsall.	Frio.	629	1								0.09		0.05	0	2						Earnest De Vilbiss.	
Pierce.	Wharton.	102	5	80.7		98	20†	61	1	35	4.83		2.04	0	6	12	12	6	s.	R. B. Pointer.		
Plainview.	Hale.	3,370	15	74.8	+ 3.8	99	5†	53	19	39	2.40	+ 0.12	0.95	0	2	19	8	3	s.	J. F. Sanders.		
Port Arthur.	Jefferson.										2.85		1.85	0	2						Griffing Brothers Co.	
Port Lavaca.	Calhoun.	20	10	85.2	+ 4.9	98	3†	71	20†	27	0.64	-	3.44	0	3	24	6	0	s.	J. H. Bickford.		
Post City.	Garza.	2,700	1								1.27		0.83	0	2	27	1	2	sw.	W. L. Dodd.		
Putnam.	Callahan.	1,591									2.02		1.76	0	3	23	6	1	s.	Rey. Joseph Reisdorff.		
Raymondville.	Cameron.										5.60		1.40	0	14	11	17	2	s.	C. H. Pease.		
Ricardo.	Nueces.	57	2	83.1		98	6†	69	20	28	1.99		1.05	0	8	9	17	4	se.	Lindsay Waters.		
Riverside.	Walker.	169	7								2.75		1.00	0	4	24	0	6	s.	Mrs. C. W. Higdon.		
Robert Lee.	Coke.	1,850	12								1.00	-	5.07	0.90	0	3	10	9	11	s.	H. D. Pearce.	
Rockland.	Tyler.	136	7								1.22		0.50	0	4	28	0	2	s.	T. W. Bellamy.		
Rockport **.	Aransas.	12	10	82.4		90	4†	70	27†	14	0.25		0.25	0	4	14	16	0	se.	Mrs. G. B. Grewe.		
Rossville.	Atascosa.	558	4	85.0		99	7†	68	1	25	0.35		0.44	0	4					W. F. M. Ross.		
Rutledge.	Karnes.	308	16								1.38		0.44	0	4					Reiffert & Frohese.		
Sabinal.	Uvalde.	964	7	84.6		99	14	68	1	28	0.04		0.02	0	2	6	15	9	se.	Jas. Johnston.		
Salado.	Bell.	1									0.16		0.16	0	1	22	0	8	s.	L. M. Crockett.		
San Angelo.	Tom Green.	1,847	20	80.0	+ 5.3	100	1	61	2†	35	2.15	-	0.56	1.25	0	3	21	5	3	s.	Sam Crowther.	
San Antonio.	Bexar.	701	26	84.6	+ 7.5	97	5	68	1	26	0.12	-	2.82	0.11	0	2	16	12	2	sc.	U. S. Weather Bureau.	
San Augustine.	San Augustine.	360	2	82.3		98	12†	66	24†	30	1.24		0.73	0	4	17	6	7	s.	F. A. Wilson.		
San Juanito.	Hidalgo.										0.51		0.32	0	4	7	19	se.	J. B. McAllen.			
San Marcos.	Hays.	588	18	84.6	+ 6.0	96	7†	64	1	28	0.14	-	2.46	0.14	0	1	22	0	8	s.	Miss L. C. Ford.	
San Saba.	San Saba.	1,712	10	83.8	+ 7.0	99	12†	60	1	34	2.77	+ 0.08	1.83	0	4	26	0	4	s.	Jas. Burns.		
Santa Gertrudes.	Nueces.	11									0.55	-	2.15	0.23	0	3					J. B. Wright, jr.	
Sealy.	Austin.	201									1.09		0.79	0	5	12	10	8	s.	O. H. Albert.		
Seymour.	Baylor.	1,320	5	79.2		102	18	53	20	41	3.91		1.85	0	4	22	0	8	s.	S. C. Lee.		
Snyder.	Scurry.	293	11			101	17	57	19	33	2.91		2.78	0	3	21	7	2	s.	J. Allen Weaver.		
Somerville.	Burleson.	251	2	84.4		100	5†	62	1	33	T.		T.	0	0	26	2	2	s.	W. A. Dolan.		
Spur.	Dickens.	2,300									1.34		0.88	0	4	24	5	1	s.	J. D. Reagan.		
Stamford.	Jones.										2.60		2.60	0	4	23	7	0		T. A. Williams.		
Stowell.	Chambers.	424	1	8																		

TABLE 2.—*Daily precipitation for September, 1911. District No. 8, Texas and Rio Grande Valley.*

TABLE 2.—*Daily precipitation for September, 1911. District No. 8—Continued.*

TABLE 2.—*Daily precipitation for September, 1911. District No. 8—Continued.*

Stations.	Watershed.	Day of month.																													Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
<i>Texas—Continued.</i>																																	
La Parra.....	Coast.....																																0.80
Laureles Ranch.....	do.....																																
Liberty |||.....	Trialty.....	T.	T.	.35																													1.68
Llano |||.....	Colorado.....	.32	.27																														0.92
Llano Grande |||.....	Rio Grande.....	T.																															0.35
Long Lake |||.....	Trinity.....																																4.62
Longview |||.....	Sabine.....																																0.55
Lubbock.....	Brazos.....	.56																															1.33
Lufkin.....	Neches.....	.10	.08																														0.99
Luling |||.....	Guadalupe.....	.35	.02																														0.58
McGregor.....	Brazos.....																																1.08
Marathon.....	Rio Grande.....																																0.30
Marble Falls |||.....	Colorado.....	.19	.03																														T.
Marta.....	Rio Grande.....																																0.60
Marshall.....	Sabine.....	.30	.31																														T. 0.61
Mate-Gorda.....	Coast.....																																0.50
Mexia |||.....	Brazos.....																																0.04
Midland.....	Colorado.....	.65																															0.75
Mission |||.....	Rio Grande.....	T.	T.	.03																													1.34
Mont Belvieu.....	Coast.....	T.	.18	T.	T.																												3.12
Mountain View.....	Pecos.....	.36																															0.35
Mount Blanco.....	Brazos.....	.28																															1.93
Nacogdoches |||.....	Neches.....	.53																															T. 0.53
New Braunfels.....	Guadalupe.....																																1.00
Palestine.....	Trinity.....																																0.59
Panter.....	Brazos.....																																1.97
Pearall.....	Nueces.....																																0.09
Pierce.....	Colorado.....	2.04	.60																														4.83
Plainview.....	Brazos.....	.06																															2.40
Port Arthur.....	Coast.....	1.85																															2.85
Port Lavaca.....	Brazos.....																																0.64
Post City.....																																2.07	
Putnam.....																																2.02	
Raymondville |||.....	Coast.....	1.17	1.24																													5.60	
Ricardo.....		.10																														1.99	
Riverside |||.....	Trinity.....	.67	T.	1.00																												T. 2.75	
Robert Lee |||.....	Colorado.....																																
Rockport.....	Neches.....																																1.00
Rossville.....	Coast.....	.07																															1.22
Rutledge.....	Nueces.....																																0.35
Sabinal.....	San Antonio.....																																1.38
Salado.....	Nueces.....																																0.04
San Angelo.....	Brazos.....																																0.16
San Antonio.....	Colorado.....																																2.15
San Augustine.....	Neches.....	T.	T.	T.																													1.24
San Juanito.....	Coast.....	.06	.04	T.																													0.51
San Marcos |||.....	Guadalupe.....																																0.14
San Saba.....	Colorado.....	.09	1.83																														2.77
Santa Gertrudes |||.....	Coast.....																																0.55
Sealy.....	Brazos.....																																1.00
Seymour.....	Colorado.....	.27	.32																														3.91
Snyder |||.....		2.78																															2.91
Somerville.....	Brazos.....																																T.
Spur |||.....		.88																															1.34
Stamford.....		2.60																															3.03
Stowell.....	Coast.....	12																															2.75
Sutherland Springs.....	San Antonio.....	.06																															0.16
Taylor.....	Brazos.....	.07																															0.20
Temple |||.....		.01																															0.46
Theodore.....	Pecos.....	.65																															0.65
Thurber.....	Brazos.....																																2.85
Tilden.....	Nueces.....																																
Tivoli |||.....	Guadalupe.....	.30																															2.92
Uvalde.....	Nueces.....				</td																												

TABLE 3.—*Maximum and minimum temperatures at selected stations, September, 1911.* District No. 8, Texas and Rio Grande Valley.

Texas.

Date.	Del Rio.	El Paso.	Fort McIntosh.		Fort Stockton.		Fort Worth.		Galveston.		Hallettsville.		Houston.		Lufkin.		Palestine.		Plainview.		San Antonio.		Seymour.		Taylor.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1 ..	98	72	89	66	100	68	93	62	92	67	88	77	92	68	90	71	93	63	88	65	93	55	94	68	93	60	92	65
2 ..	99	73	89	67	100	69	93	61	94	71	85	74	96	73	83	74	91	72	89	73	95	56	93	74	97	66	91	71
3 ..	95	74	88	64	100	72	90	60	86	69	87	77	95	75	92	73	93	68	91	71	86	57	94	75	90	62	90	72
4 ..	99	74	90	67	102	71	92	60	86	67	87	81	96	75	89	74	91	71	90	72	93	58	96	76	86	62	95	76
5 ..	103	78	92	70	104	74	97	66	93	72	88	82	99	76	95	74	98	73	94	74	99	60	97	77	96	65	96	75
6 ..	102	79	90	68	104	74	100	67	94	75	88	82	99	79	92	75	94	75	93	75	99	60	96	76	98	67	95	75
7 ..	101	78	90	69	104	74	98	68	93	75	89	80	99	79	90	76	96	72	94	75	98	64	97	75	98	68	96	76
8 ..	98	76	90	67	103	73	95	67	90	76	88	81	99	75	96	75	94	71	94	74	79	63	96	77	91	63	93	75
9 ..	98	76	81	64	101	71	95	69	91	72	87	80	95	75	99	73	95	69	93	70	88	62	96	75	94	66	95	72
10 ..	97	76	88	66	102	71	97	68	93	74	89	82	98	74	91	75	93	72	94	72	90	62	95	74	97	65	95	72
11 ..	100	76	90	67	102	72	99	65	97	74	89	82	98	75	96	76	97	70	95	74	93	62	96	76	100	66	96	73
12 ..	100	76	91	68	103	71	97	68	98	76	88	82	98	75	96	76	99	70	97	75	93	61	96	75	98	67	97	74
13 ..	100	76	90	72	103	72	101	69	95	77	89	82	100	74	94	76	97	71	95	75	94	61	96	75	98	68	96	73
14 ..	101	77	91	69	103	72	102	70	95	75	89	82	99	74	94	75	98	70	95	94	94	61	96	75	98	70	95	74
15 ..	98	76	91	70	103	72	101	70	95	75	89	83	99	75	94	76	97	71	94	74	95	61	96	76	98	67	96	73
16 ..	98	76	94	73	104	73	101	68	96	77	89	83	99	75	93	75	98	70	95	75	95	62	96	76	98	67	96	73
17 ..	99	74	90	64	103	72	102	67	97	77	88	82	97	77	94	75	98	70	95	74	96	63	97	76	97	66	96	75
18 ..	99	76	85	64	103	73	97	60	98	76	89	82	98	76	94	75	96	68	94	73	90	63	95	76	102	69	96	74
19 ..	98	74	79	63	102	76	85	62	90	66	90	81	97	70	94	73	97	68	94	73	81	53	95	73	86	54	95	71
20 ..	98	74	82	61	103	72	92	62	94	67	88	80	97	70	95	73	97	68	94	70	75	54	94	75	88	53	95	70
21 ..	100	75	86	61	103	71	97	65	82	72	89	82	96	72	94	74	96	68	88	74	87	54	96	75	87	57	93	76
22 ..	99	78	88	62	100	71	91	62	86	67	88	80	95	75	91	68	95	70	82	72	86	56	96	74	88	62	85	72
23 ..	97	74	91	64	101	72	98	61	91	68	88	76	90	72	89	73	96	67	93	69	90	58	93	71	93	66	91	69
24 ..	97	74	90	66	101	71	95	67	92	70	86	72	92	70	90	72	97	67	92	69	90	59	93	71	95	63	92	68
25 ..	96	72	90	70	97	65	95	63	92	71	85	78	93	72	91	72	97	69	91	70	91	59	93	71	96	63	92	72
26 ..	97	72	90	68	99	69	94	66	92	72	86	78	93	73	87	73	97	71	92	71	88	57	93	71	95	62	92	71
27 ..	97	75	89	69	94	70	96	64	93	73	84	74	93	73	90	73	96	69	93	72	91	53	93	74	96	65	92	70
28 ..	97	75	89	65	100	70	93	66	92	72	86	76	93	73	90	74	97	69	94	71	91	58	93	74	97	66	93	71
29 ..	97	74	85	69	100	70	95	68	91	73	88	76	93	75	86	74	96	70	91	72	90	58	94	74	97	66	91	73
30 ..	94	76	85	65	100	71	94	70	89	75	87	80	85	75	87	75	91	70	91	72	82	60	90	75	93	66	88	73
Mns..	98.4	75.1	88.4	66.6	101.5	71.4	95.8	65.4	92.2	72.4	87.7	79.6	95.8	74.1	91.4	73.9	95.7	69.7	92.5	72.3	90.4	59.2	94.8	74.3	94.6	63.7	93.7	72.5

a, **b**, **c**, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

§ Data are from standard instruments not supplied by the U. S. Weather Bureau.

Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.